OBJECTIVES Estimate the subclinical organ damage and gender differences for the cardiovascular risk stratification in hypertensive patients with metabolic syndrome.

METHODS 56 hypertensive patients with metabolic syndrome were enrolled in this study (Aged 42-64 years, mean age of the patients 52±10.6 years, male=50%). Ankle-brachial index (ABI), pulse wave velocity (PWV), carotid-intima media sickness (CIMT) was assessed. Cardiovascular risk assessed according to the SCORE model. Metabolic syndrome was diagnosed by the "Harmonized definition of the MS".

RESULTS In hypertensive women with MS had lower CIMT (0.76±0.17 vs. 0.83±0.18, P<0.05), ABI (0.98±0.20 vs. 1.10±0.24, P<0.05) and higher PWV (13.0±2.95 vs. 10.82±2.50, P<0.01) than men. The cardiovascular risk was higher in hypertensive men than in women (8.25±4.9 vs. 7.12±4.0, P<0.05) with MS according to the SCORE formula.

CONCLUSIONS Hypertensive women with metabolic syndrome were characterized lower CIMT, ABI and higher PWV than those counterparts. Cardiovascular risk was higher in hypertensive men than in women regardless of the presence of MS according to the SCORE.

GW28-e0702

Clinical characteristics and prognostic factor of Isolated-Office Hypertension in patients with Metabolic syndrome

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OBJECTIVES Some patients with hypertension therapy show a "white-coat" effect that could cause an overestimation of their real blood pressure (BP). We evaluated the prevalence and clinical characteristics of "white-coat" or isolated-office hypertension (IOH) under hypertension therapy by comparing clinic BP values with either daytime home BP measurements or the awake BP mean obtained from ambulatory BP monitoring (ABPM) and evaluation

METHODS The study evaluated 1028 patients treated with hypertension medications and evaluated by 24-h ABPM. Among the participants, classified as true IOH (elevated clinic BP and controlled awake and asleep ambulatory BPs while treated), false IOH (elevated clinic BP, controlled awake SBP/DBP means, but elevated asleep SBP or DBP mean while treated), and the controlled hypertensive patients. ABPM and pulse wave velocity (PWV), left ventricular mass index (LVMI) and plaque in carotid artery (PCA), Carotid intima-media thickness(CIMT) and urine albumin/creatinine ratio (UACR) were measured.

RESULTS Patients with false, relative to those with true, IOCH had higher prevalence of microalbuminuria and CIMT> 0.85 mm and UACR, PCA ($p < .001$), The estimated hazard ratio of CVD event, using a fully adjusted model including the significant confounding variables of sex, age, diabetes, chronic kidney disease, asleep SBP mean was significantly greater for patients with false compared with those with true IOH (2.02 [95% confidence interval: 1.95-2.32]; $p < .001$). And they had an equivalent estimated hazard ratio of CVD event (1.01 [95% confidence interval: .97-1.12]; $p = 0.54$).

CONCLUSIONS Our results suggest that much higher prevalence of non-dipper, false, isolated office hypertension is a significant increased CVD events compared with true IOH. The highly significant prognostic factor of isolated office hypertension might be nighttime BP. Comparison of clinic BP with either daytime home BP measurements or awake measurements by ABPM might be particularly important in isolated office uncontrolled hypertension for the early detection of CVD event.

GW28-e0730

Age independently correlates with circadian systolic blood pressure variation in hypertensive Adults

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OBJECTIVES A few studies indicated a relationship between age and circadian blood pressure (BP) variation. However, whether this relationship is independent or not was still unknown. Our aim was to determine the correlation between age and the circadian BP variation in a group of hypertensive adults.

METHODS Clinical data and 24-hour (24h) ambulatory BP monitoring were obtained from 297 consecutive adults with hypertension. All subjects had good technical quality 24h ambulatory BP monitoring with validated devices, according to the percentage of nocturnal BP fall, the extreme-dipping, dipping, non-dipping and reverse-dipping statuses were categorized. We classified the subtypes of nocturnal BP fall as follow: extreme-dipping (> 20% nocturnal decline in BP from the diurnal level), dipping (10% to 20% nocturnal decline in BP), non-dipping (0% to 9% nocturnal decline in BP), and reverse-dipping (< 0% nocturnal decline in BP or nocturnal elevation). We also collect other clinical data of patients, including medical history, biochemical variables, Evaluation of cardiac structure and function, etc.

RESULTS Multivariate linear regression analysis identified that age independently and negatively correlated with the percentage of nocturnal systolic BP (SBP) fall (β = -7.296, 95% confidence interval (CI): -10.430, -4.162, $P < 0.001$). The reverse-dippers were the oldest and the extreme-dippers were the youngest. The age difference among the four BP dipping statuses was significant with and without the adjustment of the sex, body mass index, drugs, diabetes, smoking, 24h mean heart rate and 24h mean systolic and diastolic BP.

CONCLUSIONS In conclusion, age independently correlated with the circadian systolic BP variation in hypertensive adults which suggested that a pattern of blunted nocturnal BP fall with ageing should be noticed in this population.

GW28-e0753

Effect of Aerobic Exercise on LV Diastolic Function in Chinese Mild Hypertensive Patients

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OBJECTIVES The purpose of this study is to determine the effect of aerobic exercise training on LV diastolic function in Chinese young male primary hypertensive patients stage 1.

METHODS Thirty-two hypertensive individuals, which were diagnosed mild blood pressure elevated (blood pressures ranging from 140 to 159 mmHg systolic and/or 90 to 99 mmHg diastolic)aged between 25 and 40 years were enrolled. Subjects were trained on a Cycle Ergometer at an intensity of 75%HR max, for 45 min, five times per week (about 2000kcal) and 12 weeks in total. 24 hours ambulatory blood pressure (ABP), heart rate were measured at baseline and at the end of aerobic exercise. Diastolic function (left atrium dimension, peak E and A velocities, E/A ratio, isovolumic relaxation time, and deceleration time) and MPI were evaluated by simultaneous transmitral and transaortic spectral Doppler flow velocities. Systolic function was evaluated by shortening fraction and ejection fraction.

RESULTS Significance of the training effects were evaluated by comparing the pre- and post-training measures ($p < 0.05$). 12 weeks of aerobic exercise training resulted in a 10-mmHg and 6-mmHg respectively reduction of SBP(143±8 to 131±12; P<0.001) and DBP(87±6 to 82±10; P=0.01). Reductions of 4bpm was also seen in HR (75±8 to 71±7; P<0.001). The significant lowering at week 12 were found in Cardiac structural parameters, LA(34.6±4.2mm to 32.4±3.4mm, P<0.001), LAi(22.4±5.7 ml/m2 to 20.1±5.1 ml/m2, P=0.011), LVDd (50.2±5.6 mm to 48.3±4.5 P=0.002,), IVSd (10.7±1.5mm to 10.2±1.2 mm, P=0.001), LVMI (73.7±16.9 g/m2 to 65.7±14.1 g/m2, P<0.001),compared to baseline. There were no statistically significant differences in Cardiac functional parameter(-LVEF,E, A, E/A ratio, Lateral e', Lateral a', lateral E/e' ratio) for the group between pre- and post-training. There were statistically significant reductions in Cardiac time intervals, IVRT(87±15ms to 74±10ms, P<0.001), IVRT/ET(0.34±0.06 to 0.27±0.05, P=0.002) and MPI (0.57±0.07 to 0.48±0.07, P<0.001) between pre-and post-training.

CONCLUSIONS Moderate intensity aerobic exercise has been proven to prevent hypertension and to help in the management of stage 1 hypertension and improve LV diastolic function.

GW28-e0786

Effects of slow breathing rate on blood pressure and heart rate variabilities in essential hypertension

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OBJECTIVES This study is to investigate the effect of slow breathing on heart rate, blood pressure, heart rate variability (HRV) and blood pressure variability (BPV) in essential hypertension.